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Quality Engineering Test Report

SERIES: DR-120 120W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A. DR-120-12 12V/10A B. DR-120-24 24V/5A C. DR-120-48 48V/2.5A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	MAX. INRUSH CURREN	I/P:230VAC SPEC:60A O/P: FULL LOAD	A: 30.617A B: 37.656A C: 27.812A	P
2	SET UP TIME	I/P:230VAC SPEC:500mS O/P:FULL LOAD	A: 268.86mS B: 309.21mS C: 301.30mS	P
3	RISE TIME	I/P:230VAC SPEC:70mS O/P:FULL LOAD	A: 18.82 mS B: 45.88 mS C: 32.29 mS	P
4	HOLD UP TIME	I/P:230VAC SPEC:30mS O/P:FULL LOAD	A: 39.19mS B: 43.18mS C: 44.21mS	P
5	LINE REGULATION	I/P:176~264VAC SPEC: A: ± 0.5 % O/P:FULL LOAD B: ± 0.5 % C: ± 0.5 %	A. +0.00 % ~ +0.05 % B. -0.00 % ~ +0.024 % C. -0.012 % ~ +0.037 %	P
6	LOAD REGULATION	I/P:230VAC SPEC: A: ± 1 % O/P:MIN. TO FULL LOAD B: ± 1 % C: ± 1 %	A. -0.35 % ~ +0.35 % B. -0.024 % ~ +0.024 % C. -0.04 % ~ +0.08 %	P
7	OUTPUT VOLTAGE TOLERANCE	I/P:176~264VAC SPEC: A: ± 2 % O/P:0% TO FULL LOAD B: ± 1 % C: ± 1 %	A. -0.73 % ~ +0.049 % B. -0.078 % ~ +0.000 % C. -0.077 % ~ +0.039 %	P
8	OVER LOAD PROTECTION	I/P:230VAC SPEC: A: 105 % ~ 150 % O/P:TESTING B: 105 % ~ 150 % C: 105 % ~ 150 %	A: 129% B: 120% C: 135%	P
9	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:176~264VAC O/P:FULL LOAD	A. 125.0V ~ 264 VAC B. 129.087V ~ 264 VAC C. 125.062V ~ 264 VAC	P
10	RIPPLE&NOISE	I/P:230VAC SPEC: A: 80 mVp-p O/P:FULL LOAD B: 80 mVp-p C: 100 mVp-p	A: 24 mVp-p B: 16 mVp-p C: 37 mVp-p	P
11	AC INPUT CURRENT	I/P:230VAC SPEC:1.7A O/P:FULL LOAD	A: 1.229 A B: 1.208 A C: 1.149 A	P
12	EFFICIENCY	I/P:230VAC SPEC: A: 80 % O/P:FULL LOAD B: 84 % C: 85 %	A: 81.938% B: 85.422% C: 85.977%	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC SPEC: A: 15~16.5V O/P:MIN LOAD B: 29~33V C: 58~65V	A: 16.2V B: 31.2V C: 59.9V	P
14	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: A: 12 V ~ 14 V O/P:MIN. LOAD B: 24 V ~ 28 V C: 48 V ~ 53 V	A. 10.65 V ~ 15.084 V B. 21.339 V ~ 29.781 V C. 39.76 V ~ 55.88 V	P
15	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<3.5mA N-FG--<3.5mA	A: L-FG: 1.74mA N-FG: 1.75mA B: L-FG: 1.74mA N-FG: 1.75mA C: L-FG: 1.74mA N-FG: 1.75mA	P

NEXT

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>16</td><td>DIELECTRIC / WITHSTAND VOLTAGE</td><td>SPEC: I/P- O/P: 3KVAC/ 1 min.
I/P - FG: 1.5KVAC/ 1 min.
O/P -FG: 0.5KVAC/ 1 min.</td><td>A: I/P-O/P: 8mA
I/P-FG: 5.9mA
O/P-FG: 14.8mA
B: I/P-O/P: 6.2mA
I/P-FG: 4.8mA
O/P-FG: 7.2mA
C: I/P-O/P: 9.45mA
I/P-FG: 7.79mA
O/P-FG: 15.5mA</td><td>P</td></tr>
<tr><td>17</td><td>INSULATION RESISTANCE</td><td>SPEC: I/P-O/P: 500VDC/100MOhms MIN.
I/P-FG: 500VDC/100MOhms MIN.
O/P-FG: 500VDC/100MOhms MIN.</td><td>A: TEST OK
B: TEST OK
C: TEST OK</td><td>P</td></tr>
<tr><td>18</td><td>BURN-IN TEST</td><td>I/P: 230VAC O/P: FULL LOAD
TA:25.7°C BURN-IN DURATION : 2.5 hrs</td><td>B:NON BREAK</td><td>P</td></tr>
<tr><td>19</td><td>ENVIRONMENT TEST</td><td>1.LOW TEMPERATURE TEST
I/P:230VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:-13.8°C</td><td>AFTER 14.5 hrs
POWER ON OK</td><td>P</td></tr>
<tr><td></td><td></td><td>2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST
I/P:230VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:52.2C</td><td>AFTER 6.5 hrs
NON BREAK</td><td></td></tr>
<tr><td></td><td></td><td>3.High Humidity High Voltage On/Off Test
I/P:267VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:26.7°C
AMBIENT HUMIDITY:95%</td><td>AFTER 14 hrs POWER ON
NON BREAK</td><td></td></tr>
<tr><td>20</td><td>TEMPERATURE RISE TEST Trise OF PARTS</td><td colspan="2">B: I/P :230VAC AFTER1.5 hr BURN-IN
O/P :FULL LOAD TA:26.1°C
<table>
<tr><th></th><th>POSITION</th><th>P/N</th><th>TEMP</th><th>Trise</th></tr>
<tr><td></td><td>BD1</td><td>BRIDGE DIODE</td><td>66.8°C</td><td>40.7°C</td></tr>
<tr><td></td><td>Q1</td><td>MAIN TRANSISTOR</td><td>76.6°C</td><td>50.5°C</td></tr>
<tr><td></td><td>T1</td><td>MAIN TRANSFORMER WIRE</td><td>80.7°C</td><td>54.6°C</td></tr>
<tr><td></td><td>D51</td><td>O/P DIODE</td><td>74.1°C</td><td>48.0°C</td></tr>
<tr><td></td><td>C52</td><td>O/P FILTER CAPACITOR</td><td>67.8°C</td><td>41.7°C</td></tr>
<tr><td></td><td>C5</td><td>I/P FILTER CAPACITOR</td><td>51.2°C</td><td>25.1°C</td></tr>
<tr><td></td><td>LF2</td><td>I/P FILTER TRANSFORMER</td><td>63.4°C</td><td>37.3°C</td></tr>
</table></td><td>P</td></tr>
<tr><td>21</td><td>CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)</td><td colspan="3">B: FUSE :4A/250V
BRIDGE DIODE :D3SB60
LINE FILTER :TF-411
TRANSFOMER TF-798
POWER SWITCHER :2SK2850
OUTPUT DIODE :ESAD92-02 20A/200V
OUTPUT CAPACITOR : N.C.C KY1500uF/35V 105°C
INPUT CAPACITOR :RUBYCON 330uF/200V 85°C
P.C.B :DR-120A-R1 FR-4 20Z DS</td></tr>
<tr><td>22</td><td>LIFE CYCLE</td><td colspan="2">B: SUPPOSE C52 IS THE MOST CRITICAL COMPONENT
I/P:230VAC O/P:FULL LOAD Ta:25°C Tc52:66.7℃ Life: 97264.8hrs
I/P:230VAC O/P:FULL LOAD Ta:45°C Tc52:89.8℃ Life: 19630.8hrs</td><td>P</td></tr>
<tr><th>DATE</th><th>SAMPLE</th><th>TEST RESULT</th><th>TEST</th><th>APPROVAL</th></tr>
<tr><td>20011012</td><td>RD SAMPLE 12V,24V,48V</td><td>PASS</td><td>VINCENT</td><td>MAX LIN</td></tr>
<tr><td>20020423</td><td>A111B01 12V,24V,48V</td><td>PASS</td><td>VINCENT</td><td>MAX LIN</td></tr>
<tr><td>20020605</td><td>A205B02 12V,24V</td><td>PASS</td><td>VINCENT</td><td>MAX LIN</td></tr>
<tr><td>20021206</td><td>A2011b01 24V</td><td>PASS</td><td>VINCENT</td><td>MAX LIN</td></tr>
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